



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/012,210	11/05/2001	Stephen V.R. Hellriegel	901115.435	5315

500 7590 07/16/2003

SEED INTELLECTUAL PROPERTY LAW GROUP PLLC
701 FIFTH AVE
SUITE 6300
SEATTLE, WA 98104-7092

EXAMINER

DINH, TUAN T

ART UNIT	PAPER NUMBER
----------	--------------

2827

DATE MAILED: 07/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/012,210	HELLRIEGEL ET AL.	
	Examiner	Art Unit	
	Tuan T Dinh	2827	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 02 April 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 14-17 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification are silent regarding "means for increasing flexibility of the substrate, claim 14, line 5"

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-2, 4, and 6-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Stopperan (U. S. Patent (U. S. Patent 5,428,190).

Regarding claims 1-2, 4, 6, Stopperan discloses a device as shown in figures 1A-1C comprising:

a flexible substrate (11, column 7, lines 61-63-see figure 1);

Art Unit: 2827

a plurality of contact pads (40, 45, 50-figure 1, column 8, line 8) on a first surface (12) of the substrate; and

a strain relief structure, which is an aperture penetrating through the flexible substrate (11) from the first surface to a second surface (13), (PTHoles 25, 30, 35, column 8, line 13, claim 27) positioned between two of the plurality of contact pads (see figure 2), the strain relief structure is a thinned region of the flexible substrate (column 7, lines 67-68), the strain relief is centered on a line between centers of two of the plurality of contact pads (30, see figure 1A).

Regarding claims 7-8, Stopperan discloses the device as shown in figure 1 further comprising a plurality of electrical traces (16, column 8, line 6) being in electrical contact with one of the contact pads, and the strain relief (PTH-30) is positioned such that it interrupts one of the electrical traces (16).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3, 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stopperan (U. S. Patent 5,428,190) in view of Furnival (U. S. Patent 3,977,074).

Art Unit: 2827

Stopperan discloses all of the limitations of the claimed invention, except for the aperture having, in a plane view, a rectangular shape. Furnival shows a device as shown in figure 2 wherein the aperture (16) or the strain relief has a rectangular shape.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a rectangular shape as taught by Furnival to employ the device of Stopperan in order to provide an interfacial connection which is inexpensive and more reliable.

7. Claims 9-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prior Art (PA-figures 1-2, submitted by applicant) in view of Furnival (U. S. Patent 3,977,074).

As best understood claims 9, and 14-17, PA clearly discloses an electrical connector as shown in figures 1-2 comprising a flexible substrate (12) including a plurality of contact pads (14) and a plurality of electrical traces (20)

Furnival teaches a plurality of apertures (16) penetrating through the flexible substrate, the plurality of apertures arranged in a regular configuration and intercalated into the plurality of contact pads.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a rectangular shape as taught by Furnival to employ the electrical connector of PA in order to provide an interfacial connection which is inexpensive and more reliable.

As to claims 10-13, the method steps are necessitated by the device structure as disclosed by PA in view of Furnival in claims 9, and 14-17.

Response to Arguments

8. Applicant's arguments filed 04/02/03 have been fully considered but they are not persuasive and moot in 112 first paragraph.

Applicant argues:

(a) Stopperan fails to teach a strain relief structure, the PTH (30) is not a function as the strain relief structure.

(b) Furnival fails to teach a flexible substrate, contact pads.

(d) Furnival fails to teach "means for increasing flexible of the substrate in the contact region".

Examiner disagrees.

Response to argument (a), applicant recites a structure of a strain relief, which is an aperture penetrating through the flexible substrate. Stopperan disclose a flexible substrate (11-figure 1) comprising PTH's (30), which are apertures and penetrating through the substrate.

Response to argument (b), Furnival teaches a printed circuit board (10) made of dielectric materials disclosed in figures 1-6, the dielectric material has properties as flexible as well.

Response to argument (d), applicant explains in page 7 of the amendment filed on 04/02/03 that the "means for function which is means to increase the flexible connector" by using different material, thinning the material, or removing the material that does not make any senses, since examiner had a question that what thing/element cause the "means for" function to be increase flexibility of the substrate. Nowhere in the

Art Unit: 2827

specification teaches/describes the function of "means for increase the flexibility of the substrate"

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T Dinh whose telephone number is 703-306-5856. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on 703-305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-1341 for regular communications and 703-305-1341 for After Final communications.

Art Unit: 2827

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

A handwritten signature in black ink, appearing to read "David L. Talbott", with a stylized flourish at the end.

TD
July 14, 2003.

DAVID L. TALBOTT
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800